United States Environmental Protection Agency

Region 10

Response to Investigations of Selenium in Groundwater and Surface Water at the Monsanto/P4 Soda Springs Plant – Soda Springs, Idaho

Fact Sheet

February 2019

The Monsanto Company (a member of the Bayer group of companies) has prepared this Fact Sheet in cooperation with the U.S. Environmental Protection Agency (EPA), and the Idaho Department of Environmental Quality (IDEQ) to provide the City of Soda Springs residents with updated information concerning the response by Monsanto to the presence of the chemical Selenium **[see *What is Selenium?*]** in area groundwater and surface water. Monsanto, with EPA and IDEQ oversight, is responsible for managing environmental investigations and remediation of the approximately 540-acre Soda Springs Elemental Phosphorus Plant (the Site) located at 1853 Highway 34 about 2 miles north of Soda Springs.

Overview of Site Groundwater Treatment Investigations (Pump and Treat)

In 2013, Monsanto secured the services of Golder Associates (Consulting firm specializing in Hydrogeologic, Remediation, & Engineering services for the Mining, Oil & Gas, and Manufacturing industries) to evaluate the appropriate response to groundwater contamination at the Site. Two treatment technologies were selected for on-site "pilot testing" and were proven effective in reducing Selenium concentrations. Additionally, groundwater pumping tests have defined the volume of water that will need to be pumped to control plume migration. With both the treatment technology and the pumping rate identified, Monsanto is moving forward with the design and installation of a Selenium Treatment Facility at a full-scale demonstration size. Once the systems are operational, data will be collected to confirm the improvement to both surface and groundwater quality at or near the Site. Additionally, this data will be used to complete the Focused Remedial Investigation and Focused Feasibility Study as well as other CERCLA required procedural documentation.

Update on Recent Groundwater and Surface Water Investigations

Site groundwater evaluations have determined that selenium is leaving the Site via a groundwater plume that extends southwards from the Site towards the City of Soda Springs. Site data show that the groundwater concentrations have been decreasing over time at many locations. However, based on ongoing sampling, EPA has determined that selenium concentrations are not decreasing as fast as originally predicted. In 2013, Monsanto, in consultation with EPA and IDEQ, began to develop and perform additional studies to learn why selenium and other contaminants in the groundwater are not decreasing at the rates originally anticipated.

Monsanto's annual monitoring indicates selenium in groundwater extends south from the Monsanto Plant to the institutional control boundary established by EPA. Based on the locations of the City's drinking water supply sources and a domestic-well study performed under the direction of EPA, this groundwater is not consumed or used domestically. As a result, there is no concern about contact through those uses. Similarly, since the selenium does not emit vapors (like those in petroleum products, such as gasoline) there is no potential for fumes in indoor air.

What is Selenium?

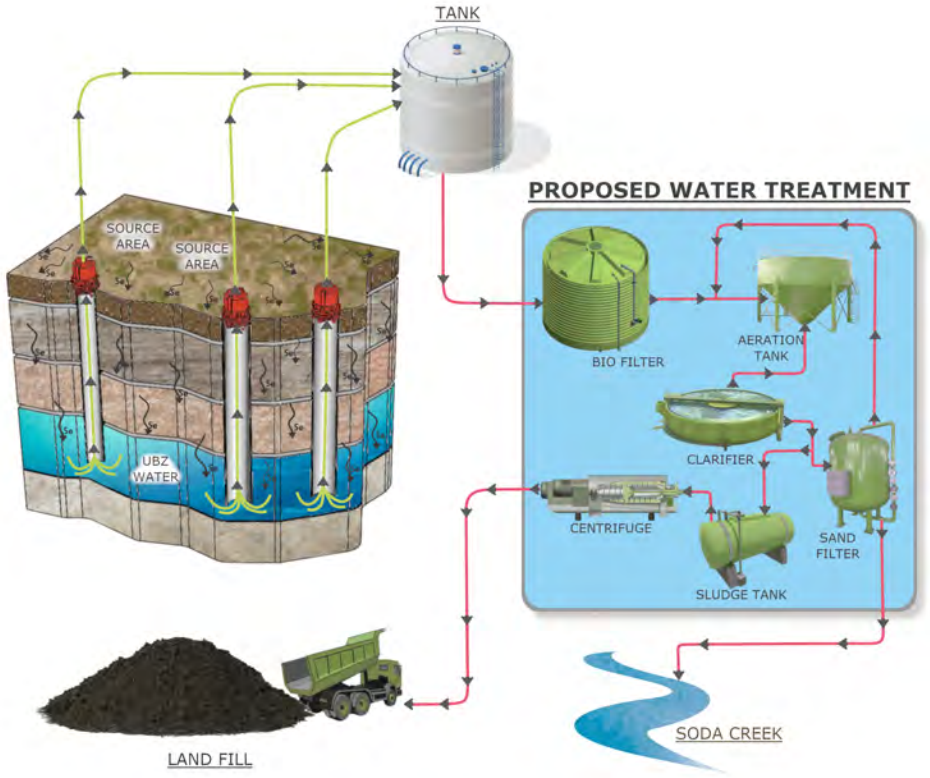
Selenium is a non-metallic trace element found in nature. In the Soda Springs area, selenium occurs naturally in the phosphate ores that are processed at the Monsanto and other area phosphate plants. Selenium is a nutritionally essential trace mineral that is needed to maintain good health, and is found in multivitamins and supplements. Short-term oral exposure to high concentrations of selenium may cause nausea, vomiting, and diarrhea. Long-term oral exposure to high concentrations of selenium may result in selenosis, which can exhibit as hair or nail loss; or neurological symptoms such as numbness in the extremities. The EPA has established a Maximum Contaminant Level in groundwater of 0.05 mg/L.

Next Steps

Monsanto will continue to design and implement additional re medial measures to further reduce selenium concentrations and to control offsite migration of selenium impacted groundwater, in consultation with the EPA and IDEQ. Additional communications about the Site will be made available as Monsanto proceeds through the CERCLA process.

As noted previously, public drinking water sources for Soda Springs are safe and not affected by this groundwater selenium plume.

The figure shows the conceptual design/configuration of the pump and treat system.



For More Information, Please Contact:

EPA: Kathryn Cerise
(206) 553-2589 • cerise.kathryn@epa.gov

IDEQ: Stan Christensen
(208) 236-6160 • stan.christensen@deq.ida.gov

If you need materials in an alternative format, please contact Kathryn Cerise at 800-424-4372, ext.2589.
TDD or TTY users, please call 800-877-8339 and give the operator Kathryn's phone number.